

A Study on Secret Data Sharing through Coverless Steganography

1st Sourabh Debnath

Department of Computer Science and Engineering
National Institute of Technology, Rourkela
Odisha, India
519cs1014@nitrkl.ac.in

2nd Dr. Ramesh Kumar Mohapatra

Department of Computer Science and Engineering
National Institute of Technology, Rourkela
Odisha, India
mohapatrark@nitrkl.ac.in

Abstract—The basic fundamental of steganography is to conceal the confidential data in designated cover media which will carry the secret message in such a way that no one can suspect it. With the increase in multimedia content over the net, the probability of information being theft is increased. To make confidential communication secure, people choose different data hiding techniques. Recently, steganography has gained popularity in information hiding. Information hiding is a subject that manages the concealing of classified data from attackers and hackers. Though the secret messages are not visible to human eyes but can be noticeable under statistical representation of cover media. The coverless hiding technique doesn't modify the cover object. However, the cover object is used to transfer confidential data. A mapping relationship is created among cover objects and confidential data by following the characteristics of cover media. The term "coverless" is without any modification in the cover image the confidential data can be sent. The prime advantage of using a coverless approach is, it cannot be detected under steganalysis as no embedding is performed in cover media. This technique has drawn more attention in the data hiding field. Currently, it has been observed that most of the research work in coverless hiding approaches selected text and image as cover media. A very few researchers have considered video as cover media in coverless approach which has plentiful contents and provides the opportunity to explore.

Index Terms—Coverless, Video Steganography, Cover object

I. INTRODUCTION

In this advanced world, the web has assumed a vital part to associate a person with the rest of the world. Transformation in the field of the web has made plenty of difficulties for sending a data in a secure way and securely. With the expansion of evolution in the domain of PC network innovation, the exploration of concealing data is growing rapidly. Aside from web-based media, email correspondence has become the go-to technique for conveying authoritatively and informally. Various video facilitating sites like YouTube, Netflix, and others are effectively accessible for everyone. Innovation is empowering us and making our lives huge, anyway on the opposite side of the coin, protection and security are settled. Digital media are moved through untrusted(internet) correspondence channels and consequently, it tends to be handily altered; or it tends to be utilized intentionally by psychological militants, hackers, and others with an awful aim, to convey the mysterious gathering areas. Data security techniques are important to move the information safely and for capture

attempts and deciphering any unlawful mystery interchanges. Information hiding [1] is a subject that manages to conceal significant classified data from attackers and outsiders. Cryptography, watermarking, and steganography [2] are the common data concealing strategies. Cryptography manages to change over plaintext into a ciphertext that isn't decipherable. Cryptography comprises two calculations – encryption and decoding. At the sender end, the encryption calculation is utilized to deliver the ciphertext from the plain content. At receiver end, the decoding calculation is sent to unscramble the plaintext from the ciphertext.

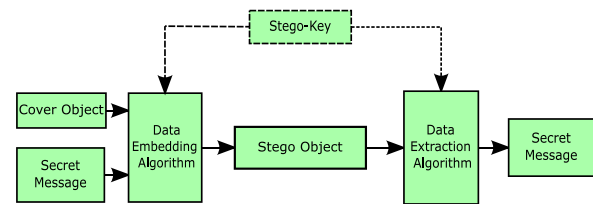


Fig. 1. Basic process of steganography

The way toward implanting private data in any advanced media is called watermarking. The inserting can be an image, logo which can be utilized to distinguish the possession, safeguarding the copyrights. The way toward concealing any private and restricted intel inside advanced media on display is steganography. The secret message isn't noticeable to the natural eye which makes it safe [3]. The immediate interpretation of the Greek word Steganography is **cover** for stego and **writing** for graphy. Steganography is utilized to ensure private data by concealing it inside advanced media. Cryptography can be applied distinctly on text, however, steganography can be utilized on text, sound, pictures, and video.

The term 'coverless' is without any changes in the cover image, secret information can be sent. Recently many techniques have been developed using coverless [4] and named as 'coverless information hiding technique'. Coverless information hiding doesn't mean that cover images are not used, but the cover image is not modified. Here a correspondence connection is created among secret information and covering object by following the characteristics of covering object rather than modifying. Currently, it has been observed that most